



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,245	08/13/2001	Donald C. Dove	ACIC-1-1008	8804
25315	7590	07/07/2004	EXAMINER	
BLACK LOWE & GRAHAM, PLLC 701 FIFTH AVENUE SUITE 4800 SEATTLE, WA 98104			SINGH, DALZID E	
			ART UNIT	PAPER NUMBER
			2633	3
DATE MAILED: 07/07/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/929,245

Applicant(s)

DOVE, DONALD C.

Examiner

Dalzid Singh

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-12 and 15-27 is/are rejected.
7) ☒ Claim(s) 13 and 14 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 13 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Fault Tolerant Hybrid Fiber-Coaxial Network System.

Claim Objections

2. Throughout the claims, applicant refers to "converting the data signal to analog signal and transmitting the analog signal to coaxial paths" It appears that applicant is merely converting from optical signal to electrical signal. As shown in Fig. 1 of applicant's disclosure, the data signal such as an optical analog signals is transmitted on the analog and digital fiber (downstream or upstream) (15), the optical analog signal is converted to electrical analog signal in order to be transmitted to the coaxial path. The signal which is data signal is still an analog signal, however, the form of the signal has changed from optical to electrical. Therefore, it appears that when applicant refers to converting the data signal to analog signal, it is assumed that the signal is being converted from optical signal to electrical signal.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3, 5 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, applicant recites "...the optical node converts the data signals of the fiber optic path to analog signals and transmits the data signals on the coaxial path" It is unclear if the data signals or the converted data signals are transmitted to the coaxial path.

In claim 5, applicant recites "...the optical node converts the data signals of the coaxial paths to optical signals and transmits the data signals on the fiber optic paths" It is unclear if the data signals or the converted data signals are transmitted to the fiber optic paths.

Claim 8 recites the limitation "the fiber optic" in line 7. There is insufficient antecedent basis for this limitation in the claim. It is unclear which fiber optical cable the applicant is referring to.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-5 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Dail (US Patent No. 5,864,748).

Regarding claims 1 and 27, Dail discloses hybrid fiber-coax system, as shown in Fig. 2, comprising:

at least one fiber optic path (160₃) connected to a data signal distribution network (120) for bi-directional transmission of data signals (the arrow shows two way transmission);

at least one coaxial path (34) connected to a data signal distribution network (200) for bi-directional transmission of data signals; and

an optical node (180) with one or more electronic modules (for example, 332, 482, 472 and 281 are electronic modules) coupled to the fiber optic (160₃) and coaxial paths (34).

Regarding claim 2, as shown in Fig. 2, Dail shows that the optical node (180) receives the data signals of the fiber optic path (160₃).

Regarding claim 3, Dail shows that optical node converts the data signals of the fiber optic path to analog signals and transmits the data signals on the coaxial path (as shown in Fig. 2, analog signal from element (130) is transmitted to optical fiber (160₂) converted to electrical signal by (O/E) 220 and transmitted to coaxial path 34). Since it is unclear which data signals are transmitted on the coaxial path, it is assumed the converted data signal is transmitted to the coaxial path.

Regarding claim 4, as shown in Fig. 2, Dail shows that the optical node (180) receives the data signals of the coaxial path (34).

Regarding claim 5, Dail shows that optical node converts the data signals of the coaxial paths to optical signals and transmits the data signals on the fiber optic paths

(as shown in Fig. 2, signal from coaxial path (34) is converted to optical signal by (E/O) 330 and transmitted to fiber (160₁)). Since it is unclear which data signals are transmitted on the fiber path, it is assumed the converted data signal is transmitted to the fiber path.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-12 and 15-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dail (US Patent No. 5,864,748) in view of Liu et al (US Patent No. 6,288,916).

Regarding claims 6 and 7, Dail discloses hybrid fiber-coax system as discussed above and differs from the claimed invention in that Dail does not specifically disclose power supply or power supply pack for providing redundant power to electronic modules and optical node. However, since the fiber node of Dail comprises optical modules and electronic modules (for example, the signals is converted from optical to electrical or vice versa, the optical signal is processed by optical element and the electrical signal is processed by electrical element), it well known in the art to provide power supply to hybrid fiber-coax system which comprises of the optical and electronic module. Liu et al is cited to show such well known concept (see col. 1, lines 7-13). Therefore, it would

have been obvious to an artisan of ordinary skill in the art to provide power supply for the optical and electronic modules of the hybrid fiber-coax system as taught by Liu et al to the hybrid fiber-coax system of Dail. One of ordinary skill in the art would have been motivated to do so in order to operate the optical and electronic modules by providing power. Furthermore, Liu et al teach the use of uninterruptible power supply (UPS) which is well known as battery or power pack.

Regarding claim 8 (as far as understood), Dail discloses hybrid fiber-coax system, as shown in Fig. 2, comprising:

- a plurality of fiber optic paths (160₁-160₄) connected to a data signal distribution network (120) for a bi-directional transmission of data signals;

- a plurality of coaxial paths (34 and 38) connected to a data signal distribution network (36') for a bi-directional transmission of data signals;

- an optical node (180) with a plurality of electronic modules (for example, 332, 482, 472 and 281 are electronic modules) coupled to fiber optic (160₁) and coaxial paths (34) for:

 - receiving the data signals of said plurality of fiber optic paths (160₁-160₄);

 - converting the data signals to analog signals and transmitting the data signals on the plurality of coaxial paths (in Fig. 2, Dail shows optical to electrical converter (220) which converts the data signal to analog signal);

 - receiving the data signals of the plurality of coaxial paths (electrical to optical converters (330 and 222) receives data signal of the coaxial path); and

converting the data signals to optical signals and transmitting the data signals on the plurality of fiber optic paths (electrical to optical converters (330 and 222) convert the electrical signal to optical signal);

Dail discloses hybrid fiber-coax system as discussed above and differs from the claimed invention in that Dail does not specifically disclose power supply or power supply pack for providing redundant power to electronic modules and optical node. However, since the fiber node of Dail comprises optical modules and electronic modules (for example, the signals is converted from optical to electrical or vice versa, the optical signal is processed by optical element and the electrical signal is processed by electrical element), it well known in the art to provide power supply to hybrid fiber-coax system which comprises of the optical and electronic module. Liu et al is cited to show such well known concept (see col. 1, lines 7-13). Therefore, it would have been obvious to an artisan of ordinary skill in the art to provide power supply for the optical and electronic modules of the hybrid fiber-coax system as taught by Liu et al to the hybrid fiber-coax system of Dail. One of ordinary skill in the art would have been motivated to do so in order to operate the optical and electronic modules by providing power. As discussed above, Liu et al teach the use of uninterruptible power supply (UPS) which is well known as battery or power pack. Furthermore, it would have been obvious to provide plurality of power supply and power supply packs in order to provide a backup system in the event that one of more of the power supply fails. One of ordinary skill would have been motivated to provide plurality of power supply and power packs in order to maintain uninterruptible operation.

Regarding claim 9, as shown in Fig. 2, Dail shows the plurality of fiber optic paths (160₁-160₄) includes a primary fiber optic path (such as (160₁) or (160₃)).

Regarding claim 10, as shown in Fig. 2, Dail shows the plurality of fiber optic paths (160₁-160₄) includes a secondary fiber optic path (such as (160₁) or (160₃)).

Regarding claim 11, as shown in Fig. 2, Dail shows the plurality of coaxial cable (34 and 38) includes a primary coaxial cable path (such as (34)).

Regarding claim 12, as shown in Fig. 2, Dail shows the plurality of coaxial cable (34 and 38) includes a secondary coaxial cable path (such as (38)).

Regarding claim 15, as shown in Fig. 2, Dail shows the secondary fiber optic path (160₃) is for the downstream transmission of digital signals.

Regarding claim 16, as shown in Fig. 2, Dail shows the secondary fiber optic path (160₁) is for the upstream transmission of digital signals.

Regarding claims 17 and 18, as shown in Fig. 2, Dail shows that the primary coaxial path (34) is for the downstream and upstream transmission of analog and digital signals (since the analog and digital signal are multiplexed, therefore the signals are both transmitted on the bi-directional coaxial path for transmission in upstream and downstream directions).

Regarding claim 19, as shown in Fig. 2, Dail shows that the secondary coaxial path (38) is for the downstream and upstream transmission of digital signals (since the analog and digital signal are multiplexed, therefore the signals are both transmitted on the bi-directional coaxial path for transmission in upstream and downstream directions).

Regarding claim 21, in col. 4, lines 12-15, Dail teaches the downstream transmission data signals to be 500-750 MHz which is in the range of 5 MHz to 870 MHz.

Regarding claim 22, in col. 4, lines 4-7, Dail teaches the upstream transmission data signals to be 50-500 MHz which is in the range of 5 MHz to 220 MHz.

Regarding claims 23 and 25, in col. 3, lines 50-56 and lines 63-66, Dail teaches the data signal is received by a subscriber of the data distribution network.

Regarding claims 24 and 26, as shown in Fig. 2, Dail shows a diplexer (280₁-280_n) for separating or combining the data signals diplexes the data signal received by a subscriber.

Allowable Subject Matter

8. Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pan (US Patent No. 6,147,786) is cited to show hybrid analog/digital WDM access network with mini-digital optical node.

Krimmel (US Patent No. 6,281,996) is cited to show hybrid fiber/coax access network.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is 703-306-5619. The examiner can normally be reached on Mon-Fri 8am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703-305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DS
June 27, 2004

Dalzid Singh